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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,295

06/16/2006

Yunwa W. Cheung

64030A US

2645

109 7590 04/10/2009

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
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EXAMINER

NEGRELLI, KARA B

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/10/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,295	Applicant(s) CHEUNG ET AL.	
	Examiner KARA NEGRELLI	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 1-10, drawn to a crosslinkable, expandable polymeric composition comprising a low temperature free radical inducing species.

Group II, claim 11, drawn to crosslinkable, expandable polymeric composition comprising a short half-life free radical inducing species.

Group III, claims 12-13 and 15-17, drawn to a process for preparing a crosslinkable, expandable polymeric composition comprising a low temperature free radical inducing species.

Group IV, claim 14 drawn to a process for preparing a crosslinkable, expandable polymeric composition comprising a short-half-life free radical inducing species.

Group V, claims 18-20 drawn to an article of manufacture.

2. The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:
unity of invention is not present because the common technical feature, a crosslinkable, expandable polymeric composition comprising a free radical crosslinkable polymer, a free-radical inducing species, a crosslinking-profile

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modifier, and a blowing agent, can be found in the prior art, EP 1,264,857 A1 to Hasegawa (page 3, paragraph [0013], [0014], and [[0024], page 6, paragraphs [0041] – [0043], page 29, paragraph [0154], and page 37, paragraph [0196]).

3. During a telephone conversation with Kevin Hansbro on April 1, 2009 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

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6. In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 3-7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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9. The term "nominal" in claim 3 is a relative term which renders the claim indefinite. The term "nominal" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

10. The term "in an amount sufficient" in claims 4, 6, and 7 is a relative term which renders the claim indefinite. The term "in an amount sufficient" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

11. The term "at least as fast" in claim 5 is a relative term which renders the claim indefinite. The term "at least as fast" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

12. The term "at least as high" in claim 7 is a relative term which renders the claim indefinite. The term "at least as high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

13. Clarification is requested.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita et al. (US 5,723,554).

16. As to claim 1, Fujita et al. teach a process for producing a styrenic polymer (which is a crosslinkable, expandable polymeric composition) comprising (a) a compound which is co-polymerizable with the styrenic compound such as a vinyl monomer such, for example, methyl methacrylate or methyl acrylate, acrylonitrile, or methacrylonitrile (column 4, lines 40-48), (b) a free radical initiator such as t-butyl peroxybenzoate (column 4, line 65 – column 5, line 3), (c) a radical scavenger (free radical inhibitor, such as the crosslinking-profile modifiers disclosed in the instant application) such as TEMPO (column 5, lines 22-32), and (d) a blowing agent (column 6, lines 13-23).

17. As to claims 2-3, Fujita et al. teach that the blowing agent (d) can be a decomposable (chemical) blowing agent or a volatile blowing agent which (column 6, lines 13-23).

18. As to claim 4, Fujita teaches that radical scavenger is present in an amount comparable to the amount of crosslinking-profile modifier taught in the instant specification. See Fujita, Table 1, column 7, lines 15-45. It is therefore

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inherent that the crosslinking profile modifier would be present in an amount sufficient to permit uniform heating of the styrenic compound, since such a property is evidently dependent upon the nature of the composition used. Case law holds that a material and its properties are inseparable. In *re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

19. Instant claim 5 state a property of the composition disclosed in instant claim 1. Fujita et al. do not elaborate on the properties recited in claim 5.

However, since the same composition that is disclosed in instant claim 1 is taught by Fujita et al., one of ordinary skill in the art would expect that the composition of Fujita et al. would have the same properties as the composition disclosed in instant claim 1. Case law holds that a material and its properties are inseparable. In *re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

20. As to claim 6, Fujita teaches that free radical initiator(s) is/are present in an amount comparable to the amount of free radical initiator taught in the instant specification (paragraph [0050]). See Fujita, Table 1, column 7, lines 15-45. It is therefore inherent that the free radical initiator would be present in an amount sufficient to achieve a crosslinking density at least as high as achievable in the absence of the crosslinking profile modifier (radical scavenger). Case law holds that a material and its properties are inseparable. In *re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

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21. As to claim 8, Fujita et al. teach that the composition as applied to claim 1 can be used for various kinds of molded articles, including articles made by a foam molding process (column 5, lines 58-64).

22. As to claims 9-10, Fujita et al. teach the composition as applied to claim 1 and the article of claim 8. Instant claims 9-10 state a properties of the composition disclosed in claim 8. Fujita et al. do not elaborate on the properties recited in instant claims 9-10. However, since the same composition that is disclosed in instant claims 1 and 8 are taught by Fujita et al., one of ordinary skill in the art would expect that the composition of Fujita et al. would have the same properties as the composition and article disclosed in instant claims 1 and 8, respectively. Case law holds that a material and its properties are inseparable. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. (US 5,723,554).

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25. As to claims 7, Fujita et al. teach that the styrenic compound is styrene or alpha-substituted alkylstyrene, such as alpha-methylstyrene (column 4, lines 35-39) and a compound which is co-polymerizable with the styrenic compound is co-used (a free radical crosslinkable polymer) (column 4, lines 40-45). The cure booster of the instant application can comprise alpha methyl styrene.

26. Fujita et al. do not elaborate on the properties recited in claim 7, namely that the cure booster is present in an amount sufficient to achieve a crosslinking density at least as high as achievable in the absence of the crosslinking profile modifier. However, it would be obvious to one of ordinary skill in the art that the amount of alpha-methylstyrene present in the composition taught by Fujita et al. would be sufficient to achieve a crosslinking density at least as high as achievable in the absence of the crosslinking profile modifier. See column 6, line 40- column 8 line 20, Examples 1-6.

Double Patenting

27. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

28. Claims 1-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-3 and 5-10 of U.S. Patent No. 10/583,227 (referred to as the copending application). Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant application and the copending application teach a crosslinked, expandable composition and article manufactured from said composition, said composition of which comprises a free-radical crosslinkable polymer, a free-radical inducing species, and a crosslinking-temperature-profile modifier. Although claim 1 of the copending application does not claim a blowing agent, a chemical or physical blowing agent (preferably chemical) can be added to the composition of the copending application to produce an expandable material (paragraphs [0092] and [0119] of the copending application). The instant application teaches the free-radical crosslinkable polymers of claims 2-3 of the copending application, in the specification of the instant application, paragraph [0031]. The instant application further teaches that the free radical inducing can include those claimed in claim 5 of the copending application, (instant application, paragraph [0048]). The instant

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application teaches that the crosslinking profile modifier can include a free radical inhibitor including those taught in claims 5-10 of the copending application (instant application, paragraphs [0052] and [0060]-[0061]).

29. This is a provisional obviousness-type double patenting rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARA NEGRELLI whose telephone number is (571)270-7338. The examiner can normally be reached on Monday through Friday 8:00 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571)272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KARA NEGRELLI/
Examiner, Art Unit 1796

/Robert Sellers/
Primary Examiner
Division 1796